Editorial: Gamification for sustainable development

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Gamification has become a fairly recent addition to the topics covered in the Simulation & Gaming journal. This approach, focusing on influencing users’ behaviour and engaging them through the integration of game design elements into other processes, practices, interfaces, etc. (Huotari & Hamari, 2012), has also naturally found an area of application in efforts to promote sustainability. The field of simulation/gaming has a long history of using games to teach and raise awareness about sustainability issues (Nguyen et al., 2024; Robinson & Ausubel, 1983; Tribaldos & Schneider, 2021), covering all of the areas addressed by the United Nations Sustainable Development Goals (SDGs). The number of games produced to this end has grown in recent years, with many new titles combining economic, societal, and environmental aspects in their approaches (Stanitsas et al., 2019). Katsaliaki and Mustafee (2015), in their review of educational games for sustainability, conclude that games generally are able to improve the players’ understanding of the issues at hand. Understanding, however, might not be enough. Although many of these studies start from the premise that known solutions to existing sustainability problems are not actioned because of people’s lack of knowledge (Agusdinata et al., 2023), it is widely recognised that knowledge about or attitude towards certain issues or solutions do not always translate into the desired behaviour (Vermeir & Verbeke, 2006).

Gamification has therefore emerged as a possible solution to the gap between knowledge and action in the field of sustainable development. This approach expands the idea of using games to promote sustainability one step further. In addition to creating new games addressing these issues, gamification proposes to use elements, dynamics and strategies traditionally associated with games in other contexts. This still allows to inform people of sustainability issues, but can also be used to motivate them to improve things, and to create networks that allow us all to solve wicked problems that no party can address on its own (Fernández Galeote et al., 2021; Spanellis & Harviainen, 2021) - climate change being a chief example (Fernández Galeote, 2024). Successful behavioural interventions that made use of gamification include reducing energy consumption (Casals et al., 2020; Johnson et al., 2017), promoting more sustainable food choices (Berger, 2019), and recycling (Hsu, 2022; Hsu & Chen, 2021), to name but a few. However, many of these examples focus on instrumental interventions. The instrumental design nudges people towards certain behaviours that are deemed more sustainable and helps them to form habits around these behaviours, by embedding game elements in the processes and practices in question, and thus making them more fun and persuasive. This design strategy can work reasonably well in contexts of individual consumer behaviour and environmental sustainability. In contrast, some scholars argued for a more decentralised approach that gives users more agency and employs more humanistic design practices (Deterding, 2019; Spanellis, 2023). Unlike instrumental design, which defines for the user what sustainable behaviour should be like, the humanistic design invites the users to co DEFINE the problem and co-design the solution. The right solution is not pre-determined, but rather emerges through the exploration of trade-offs in the system and discussion of the potential solutions. The
argument for this approach is particularly prominent in the field of citizen engagement (Hassan, 2017; Thibault et al., 2021).

This issue aims to make an important contribution to the field of gamification in the area of sustainable development by collecting contributions that scrutinise further what makes a gamification intervention successful in having a positive impact. The contributions engage with aspects that are new to the debate about the success factors of gamified interventions - i.e., business models employed by the creators of gamified apps, situated factors of deploying gamified interventions, and contextual factors of skill-building interventions.

The issue contains three contributions. The first article focuses on sustainable consumption apps and engages with the creators of these apps to gain insights into the field of gamified sustainable consumption and about the survival strategies and lessons learnt from their experiences (Guillen & Hamari, 2023). The article highlights the importance of flexibility and past experience over professional background in the survival of their apps.

The second article analyses the effectiveness of a programme BLUTUBE in promoting virtuous water usage practices (Di Paolo & Pizziol, 2023). The article underscores the importance of the context in addition to the game itself in promoting sustainable practices. Specifically, playing the games at school in combination with engaging with social activities (taking pictures of virtuous actions) resulted in more significant behavioural change.

The third article analyses the effectiveness of a Web-based Virtual Learning Environment and Virtual Reality experience to teach school children about road safety in relation to cycling, who are considered a high risk group (Vuorio, 2024). This type of training deals with the development of cognitive skills rather than simply filling in information deficit prevalent in many educational gamified environments. It demonstrates that virtual reality in particular can be effective at engaging with school children across different levels, but aspects such as motion sickness need to be considered in design.

We hope you enjoy this special issue.

References


